

## II. Schottky Rectifier

### 5.0A Surface Mount Schottky Rectifier S52AF~S520AF

(Package: SMAF)

<p><u>FEATURES</u></p> <ul style="list-style-type: none"> <li>• The plastic package carries Underwriters Laboratory Flammability Classification 94V-0</li> <li>• For surface mounted applications</li> <li>• Metal silicon junction, majority carrier conduction</li> <li>• Low power loss, high efficiency</li> <li>• Built-in strain relief, ideal for automated placement</li> <li>• High forward surge current capability</li> <li>• High temperature soldering guaranteed : 260°C/10 seconds at terminals</li> </ul> <p><u>MECHANICAL DATA</u></p> <ul style="list-style-type: none"> <li>• Case : JEDEC SMAF molded plastic body</li> <li>• Terminals : Leads solderable per MIL-STD-750, Method 2026</li> <li>• Polarity : Color band denotes cathode end</li> <li>• Mounting Position : Any</li> <li>• Weight : 0.038 grams</li> </ul>	<p>Case: SMAF Dimensions in inches and (millimetres)</p>
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## Ratings & Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

Characteristics	Symbol	S52AF	S53AF	S54AF	S55AF	S56AF	S58AF	S510AF	S515AF	S520AF	Units	
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	80	100	150	200	Volts	
Maximum RMS voltage	$V_{RMS}$	14	21	28	35	42	56	70	105	150	Volts	
Maximum DC blocking voltage	$V_{DC}$	20	30	40	50	60	80	100	150	200	Volts	
Maximum average forward current at $T_L$ (See Fig.1)	$I_o$	5.0									Amps	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	150.0									Amps	
Maximum instantaneous forward voltage at 5.0A	$V_F$	0.55			0.70		0.85		0.95		Volts	
Maximum DC reverse current $T_a = 25^\circ C$ at rated DC blocking voltage $T_a = 100^\circ C$	$I_R$	0.5						0.2		mA		
Typical junction capacitance (Note 1)	$C_j$	200.0									PF	
Typical thermal resistance (Note 2)	$R_{th-JA}$	80.0									°C/w	
Operating junction temperature range	$T_j$	-55 to +125					-55 to +150					°C
Storage temperature range	$T_{stg}$	-55 to +150									°C	

Notes:

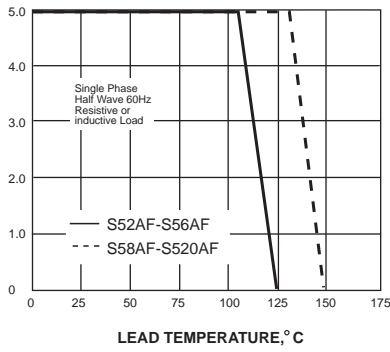
1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
2. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

<http://patron-components.com/>

# Ratings and Characteristic Curves of S52AF~S520AF

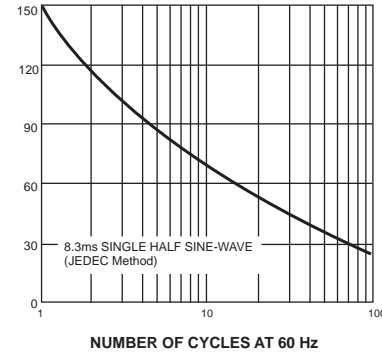
AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



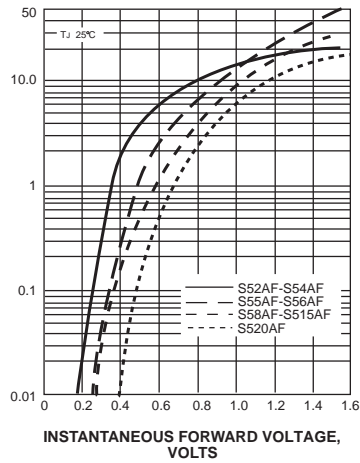
PEAK FORWARD SURGE CURRENT, AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



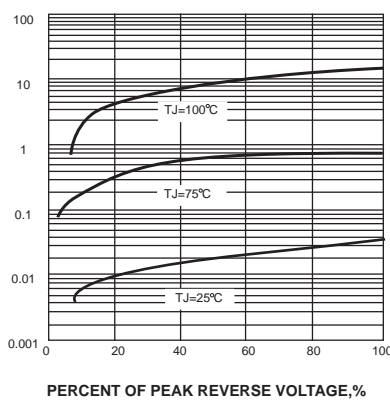
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



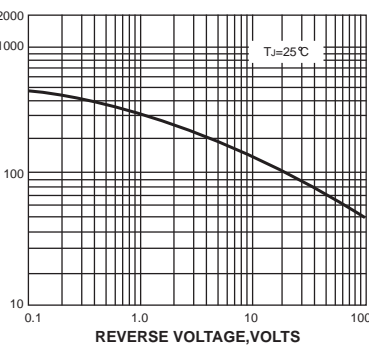
INSTANTANEOUS REVERSE CURRENT, MILLIAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE, °C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

